



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/664,857

09/22/2003

Kenji Umayahara

116675

4323

25944 7590 07/27/2011

OLIFF & BERRIDGE, PLC
P.O. BOX 320850
ALEXANDRIA, VA 22320-4850

EXAMINER

WILLS, MONIQUE M

ART UNIT

PAPER NUMBER

1728

NOTIFICATION DATE

DELIVERY MODE

07/27/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

OfficeAction25944@oliff.com
jarmstrong@oliff.com

Office Action Summary	Application No. 10/664,857	Applicant(s) UMAYAHARA ET AL.	
	Examiner MONIQUE WILLS	Art Unit 1728	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5-12 and 24-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5-12 and 24-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

This Office Action is in response to the amendment filed June 25, 2010. The claims are treated as follows:

- Claims 3, & 6-7 & 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
- Claims 8-12 are allowed.
- The rejection of claims 1, 5 & 24 under 35 U.S.C. 103(a) as being unpatentable over Itou U.S. Pub. 2003/0150655 is overcome.
- The rejection of claim 26 under 35 U.S.C. 103(a) as being unpatentable over Itou U.S. Pub. 2003/0150655 in view of Yonetsu et al. U.S. Pub. 2003/0082421 is overcome.

Allowable Subject Matter

Claims 3, & 6-7 & 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The instant claims are allowable over the prior art of record, because the prior art is silent to the generation of the alert being implement when fuel is consumed during the furl cell system performing a heat-retention operation (claims 3 & 6-7).

Art Unit: 1728

With respect to claim 4, the claim is allowable because the prior art is silent to the alert being sent to an information terminal of the user using wireless communication. With respect to claim 25, the instant claim is allowable because the prior art is silent to the information terminal being selected from a cell phone, PDA, personal computer or house phone.

Claims 8-12 are allowed. The instant claims are allowable over the prior art of record, because the prior art is silent to the alert method of claim 8 including an information terminal of a user at a location away from the moving body using wireless communication.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5 & 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Redmond U.S. Pub. 2007/0259220.

With respect to **claim 1**, Redmond teaches an alert method relating to a remaining fuel amount of the fuel cell system comprising: communicating information related to the remaining fuel amount when fuel of the fuel cell system is connected to an information terminal. See Figure 18, where the vehicle 1840 wireless outputs a signal to a server 1850 then to wireless connections, such as a home. An alert is

Art Unit: 1728

generated to a user a way from a moving body (vehicle) as the mobile hydrogen recovery system in a vehicle 1840 may each contain wired or wireless communication devices to convey hydrogen fuel cassette information to a World Wide Web server computer system 1850 using various known and conventional data communication techniques. See paragraph 166. With respect to **claim 5**, one or more audible or visible stimuli may be used to alert the user that the fuel levels are low and to obtain more hydrogen. See paragraph 188.

Redmond does not expressly disclose switching from an operation state of the fuel cell system to a stopped state of the fuel cell system ; detecting that the fuel cell system is switched to a stopped state(**claim 1**): or that the remaining fuel amount is reduced when fuel of the fuel cell system is consumed in the stopped state (**claim 24**).

However, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to switch from an operating state to a stopped state and detecting that the fuel cell system is off in the alert method of Redmond, in order to accurately determine the amount of hydrogen fuel that remains. The skilled artisan recognized that the fuel level is critical when operating a fuel cell powered vehicle. The vehicle will be inoperable when the hydrogen levels are depleted. With respect to **claim 24**, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to reduce fuel amount when fuel is in the stopped state, in order to obviate waste and overflow.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Redmond U.S. Pub. 2007/0259220 in view of Yonetsu et al. U.S. Pub. 2003/0082421.

Redmond teaches a fuel cell system arrangement as described in the rejection recited hereinabove, including fuel amount detection sensor which detects the fuel amount remaining in the fuel container. See paragraphs 169 where the sensor may communicate any information about the cassette. See paragraph 170, where the information may include the amount of hydrogen stored in the cassette..

Itou does not expressly disclose that the fuel amount is based on tank pressure or tank weight.

However, Yonetsu teaches that it is well known in the art use tank pressure to determine fuel amounts. See the Abstract and paragraph 134.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to employ the tank pressure based determination of fuel amounts Yonetsu, as the sensor methods of Redmond in order to improve accuracy of fuel amount measurements.

Art Unit: 1728

Response to Arguments

Applicant's asserts that Itou U.S. Pub. 2003/0150655 does not qualify as prior art because the verified English translation of JP 2002-280317 filed September 26, 2002 perfects priority and antedates the reference. This assertion is correct and all previously pending rejections are overcome.

Conclusion

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Monique Wills whose telephone number is (571) 272-1424. The Examiner can normally be reached on Monday-Friday from 8:30am to 5:00 pm.

If attempts to reach Examiner by telephone are unsuccessful, the Examiner's supervisor, Jennifer Michener, may be reached at 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Art Unit: 1728

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Monique M Wills/

Examiner, Art Unit 1795

/Cynthia H Kelly/

Supervisory Patent Examiner, Art Unit 1722